Trending stocks are responsible for virtually all of the market's gains
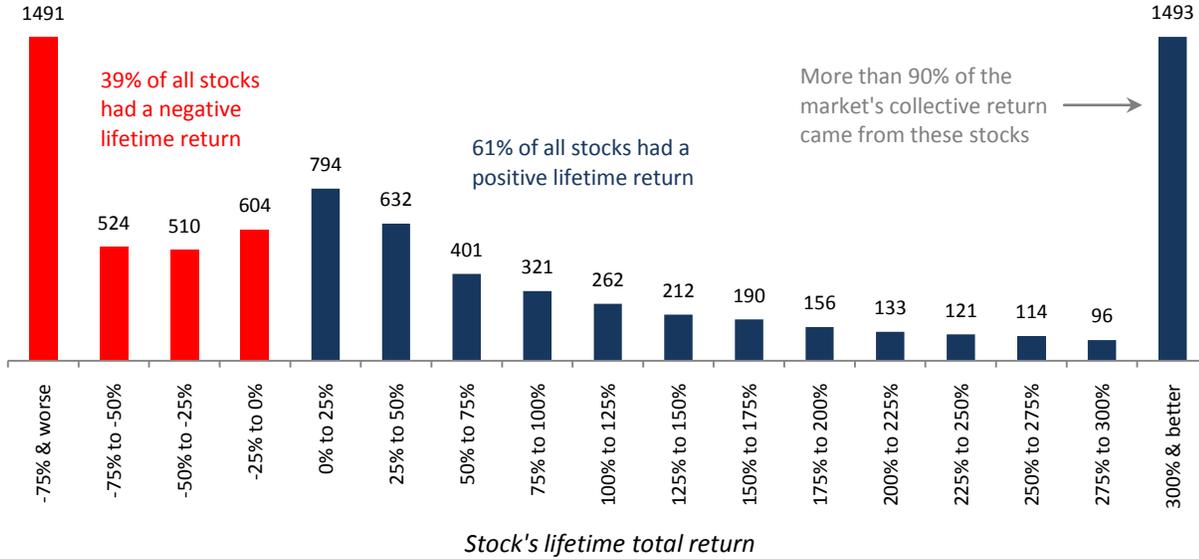
Actual historical record and how academic theory unknowingly agrees

Actual Historical Record

With respect to individual U.S. stocks, lifetime returns have not been symmetrical or balanced. Between the years 1983 and 2006 (24 years) a small minority of very strong stocks were responsible for the vast majority of the overall market's gains.

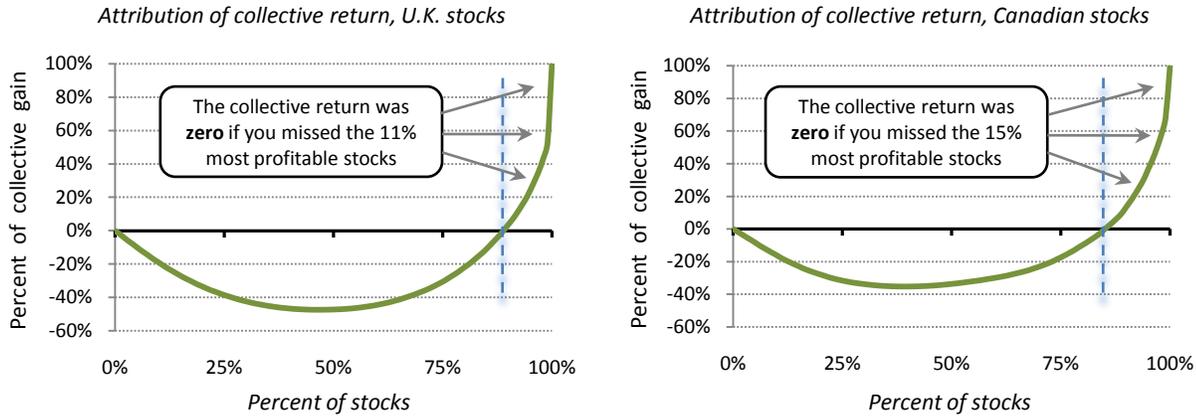*Lifetime total returns of individual U.S. stocks, 1983 to 2006*

39% of all stocks had a negative lifetime return

61% of all stocks had a positive lifetime return

More than 90% of the market's collective return came from these stocks

Stock's lifetime total return

Attribution of collective return of U.S. stocks, 1983 to 2006
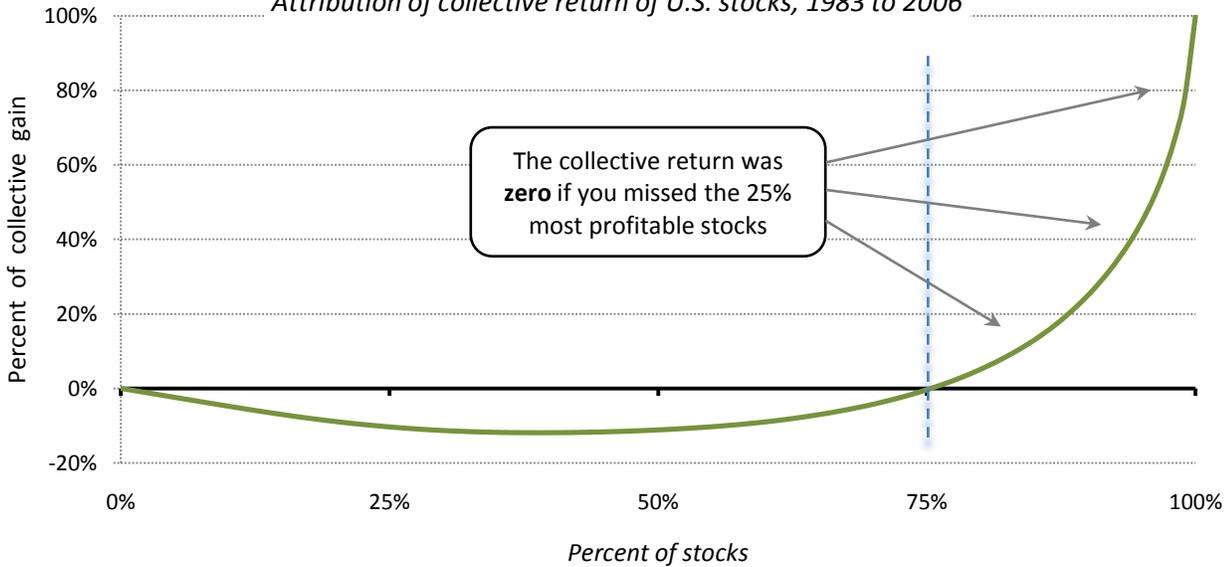
The collective return was **zero** if you missed the 25% most profitable stocks

Percent of stocks

The database covers common stocks that traded on the NYSE, AMEX, and NASDAQ since 1983, including delisted stocks. Point-in-time liquidity filters used to limit universe to the approximately 8,000 (due to index reconstitution, delisting, mergers, spin-offs, IPOs', etc.) stocks that would have qualified for membership in the Russell 3000 at some point in their lifetime. Stock and index returns were calculated on a total return basis (dividends reinvested).

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Analysis* of stocks from the United Kingdom and Canada shows similar results. All of the collective gains came from a small minority of outperforming stocks.
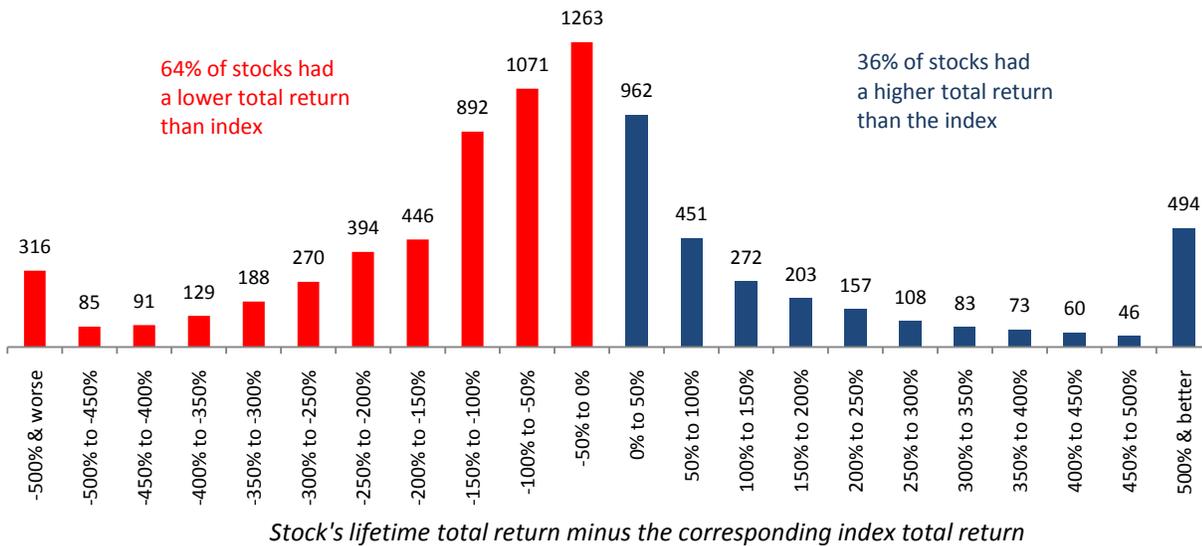
Attribution of collective return, U.K. stocks

Attribution of collective return, Canadian stocks

The collective return was **zero** if you missed the 11% most profitable stocks

The collective return was **zero** if you missed the 15% most profitable stocks

Percent of collective gain

Percent of stocks

Analysis of U.K. and Canada covered 1996 – 2006, including delisted stocks, incomplete dividend data for U.K. stocks

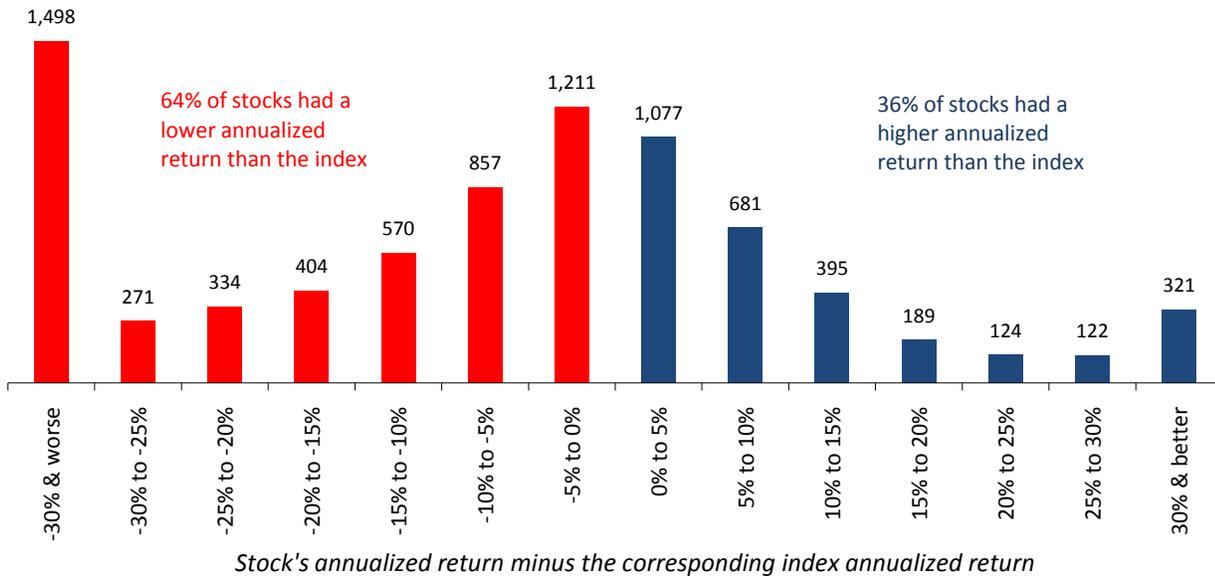## A Relative View of the Historical Record

Between the years 1983 and 2006 nearly two thirds of liquid U.S. common stocks underperformed the Russell 3000 index over the course of their lifetime. The following charts illustrate this phenomenon on a lifetime total return and compounded annual return basis.

Lifetime **total** returns of individual U.S. stocks vs. Russell 3000 index, 1983 to 2006

64% of stocks had a lower total return than index

36% of stocks had a higher total return than the index

Category	Value
-500% & worse	316
-500% to -450%	85
-450% to -400%	91
-400% to -350%	129
-350% to -300%	188
-300% to -250%	270
-250% to -200%	394
-200% to -150%	446
-150% to -100%	892
-100% to -50%	1071
-50% to 0%	1263
0% to 50%	962
50% to 100%	451
100% to 150%	272
150% to 200%	203
200% to 250%	157
250% to 300%	108
300% to 350%	83
350% to 400%	73
400% to 450%	60
450% to 500%	46
500% & better	494

Stock's lifetime total return minus the corresponding index total return

The Russell 3000 Index measures the performance of the largest 3000 U.S. companies representing approximately 98% of the investable U.S. equity market. The database covers common stocks that traded on the NYSE, AMEX, and NASDAQ since 1983, including delisted stocks. Point-in-time liquidity filters were used to limit universe to the approximately 8,000 (due to index reconstitution, delisting, mergers, spin-offs, IPOs', etc.) stocks that would have qualified for membership in the Russell 3000 at some point in their lifetime. Stock and index returns were calculated on a total return basis (dividends reinvested). Start and stop dates for the corresponding index return were matched to those of each individual stock.

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Lifetime *annualized* returns of individual U.S. stocks vs. Russell 3000, 1983 to 2006

64% of stocks had a lower annualized return than the index

36% of stocks had a higher annualized return than the index

Value	Category
1,498	-30% & worse
271	-30% to -25%
334	-25% to -20%
404	-20% to -15%
570	-15% to -10%
857	-10% to -5%
1,211	-5% to 0%
1,077	0% to 5%
681	5% to 10%
395	10% to 15%
189	15% to 20%
124	20% to 25%
122	25% to 30%
321	30% & better

Stock's annualized return minus the corresponding index annualized return
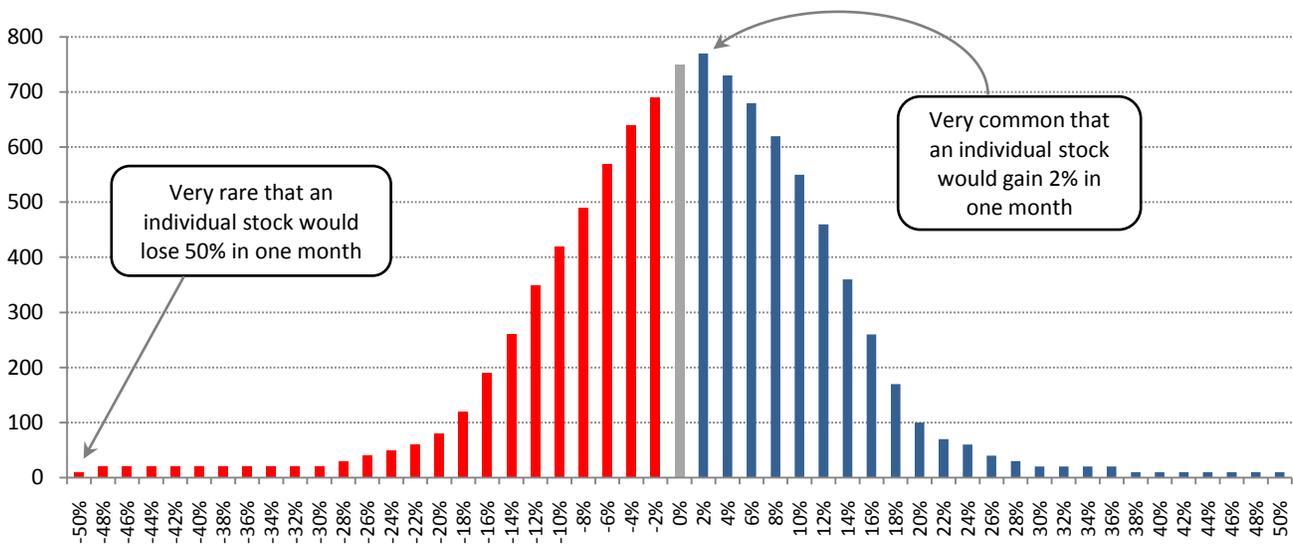
Relative return analysis of stocks from the United Kingdom and Canada showed essentially the same results; approximately two thirds of stocks underperformed their respective country index and the resulting distributions displayed fat tails.
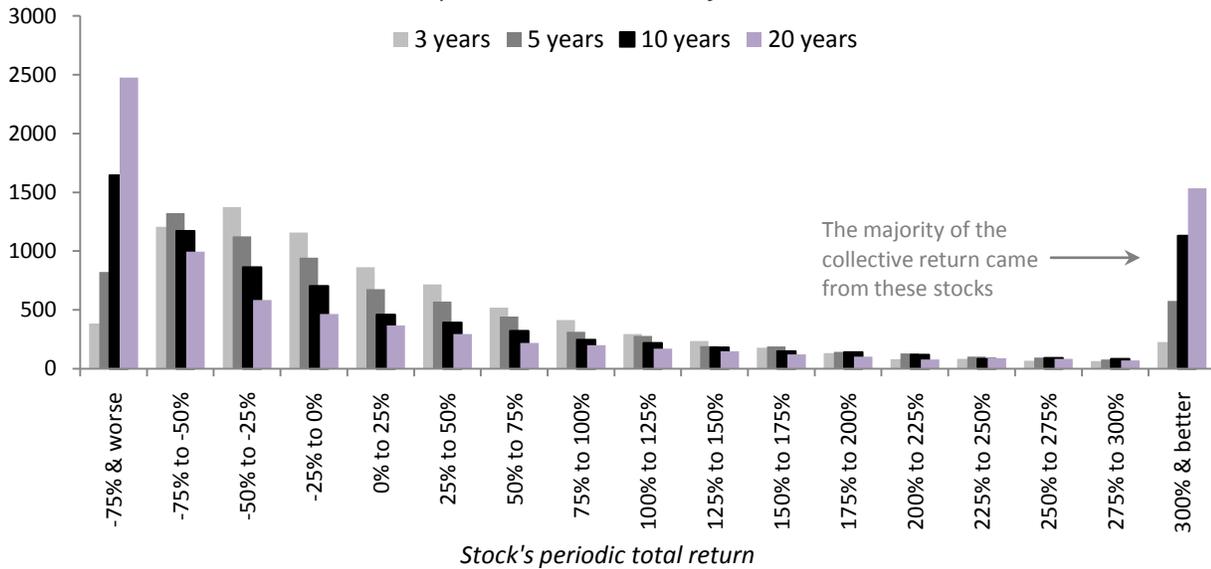
Simulating Academic Theory

Most financial academics and many market participants believe that stock price movements are essentially random and adhere to a somewhat normal distribution. The following chart illustrates such a distribution, which has been calibrated to have a positive mathematical expectancy of 8% annualized, which is approximately the long term average annual return of the Russell 3000.

Assumed distribution of 10,000 monthly individual stock returns

Very rare that an individual stock would lose 50% in one month

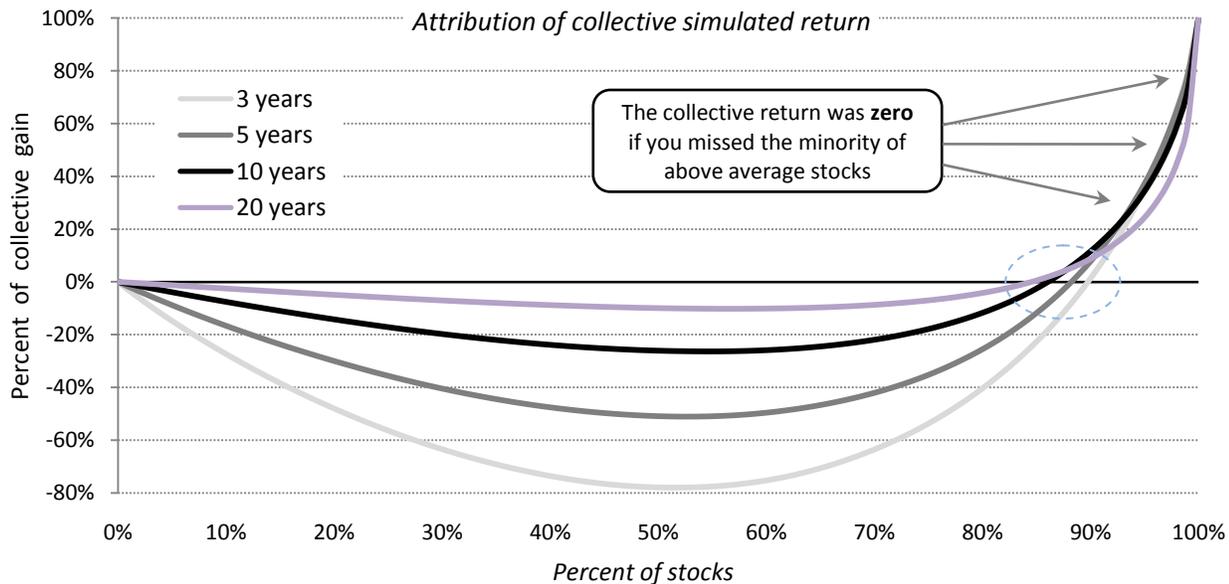Very common that an individual stock would gain 2% in one month

Randomly sampling the above distribution on a probability weighted basis (sample and replace) to construct 8,000 simulated stocks shows the following results.

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Simulated periodic total returns of individual stocks

Legend: 3 years, 5 years, 10 years, 20 years

The majority of the collective return came from these stocks →

X-axis (Stock's periodic total return): -75% & worse, -75% to -50%, -50% to -25%, -25% to 0%, 0% to 25%, 25% to 50%, 50% to 75%, 75% to 100%, 100% to 125%, 125% to 150%, 150% to 175%, 175% to 200%, 200% to 225%, 225% to 250%, 250% to 275%, 275% to 300%, 300% & better

Despite normally distributed random monthly returns, most stocks deliver below average results while a small minority produces virtually all of the market's collective gain. The reason for this has to do with the asymmetric payoff structure of common stocks. Losses cannot exceed -100% while gains can be far greater than +100%.

(Normal distributions + randomness + time + limited liability) = a minority of large winners

Attribution of collective simulated return

The collective return was **zero** if you missed the minority of above average stocks

Legend: 3 years, 5 years, 10 years, 20 years

Y-axis: Percent of collective gain
X-axis: Percent of stocks

Simulation of conventional academic theory and actual historical record both show that a minority of especially strong stocks account for the vast majority of the overall market's gains. Every member of this minority shared one common characteristic. Each showed the propensity to appreciate to new all time highs, either more frequently, over longer periods of time, or with more acceleration than the majority of below average stocks. Each of these phenomenons meets the mathematical definition of a trend.

A stock cannot start at $10 and finish at $200 without making new highs along the way. Regardless of the path taken, above average positive lifetime returns (adjusted for dividends) cannot result without a series of new all time highs. Buying that first all time high and staying invested in stocks that continue to appreciate is trend following…..on stocks.

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